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MEMORANDUM

DATE: January 21, 2004

TO: Renee Nordeen, Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-Chemist, E & E, Seattle, WA

SUBJ: **Inorganic Data Quality Summary Check, Gorst Creek-Bremerton Auto Wrecking Integrated Assessment, Bremerton, Washington**

REF: TDD: 03-07-0009 PAN: 001281.0291.01IA

The data quality assurance summary check of 7 water samples collected from the Gorst Creek-Bremerton Auto Wrecking site in Bremerton, Washington, has been completed. Target Analyte List (TAL) metals analyses (EPA CLP SOW ILM04.1) were performed by the Chemtech Consulting Group of Mountainside, New Jersey.

The samples were numbered:

MJ2789	MJ2790	MJ2791	MJ2792	MJ2795
MJ2798	MJ27B4			

The secondary reviewer added the (J) qualifier to sample results (B) that were only qualified based on concentration. The (JB) qualifiers were placed in the "Q" column of the Form I for clarity.

Sample results qualified (B) by the laboratory to indicate a result less than the contract required quantitation limit but greater than the instrument detection limit that also had additional data or bias qualifiers applied by the EPA validator were changed to (JB) by the secondary reviewer for clarity. All results qualified (B) by the laboratory are considered non-detect for Hazard Ranking System purposes.

No validation discrepancies were noted.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

January 15, 2004

Reply To
Attn. Of: **OEA-095**

MEMORANDUM

SUBJECT: Data Validation for Gorst Creek PA/SI, Case# 32364, SDG: MJ27B4, Inorganic Analyses

FROM: Donald Matheny, Senior Chemist
Technical Support Unit, OEA DM

TO: Joanne LaBaw, Site Assessment Manager
Office of Environmental Cleanup

CC: Bruce Woods, Region 10 CLP TPO

The data validation of inorganic analyses for the above sample set is complete. Seven (7) water samples were analyzed for metals by the Chemtech Consulting Group, Mountainside, New Jersey. Sample numbers for this delivery group are as follows:

MJ2789	MJ2790	MJ2791	MJ2792	MJ2795
MJ2798	MJ27B4			

DATA QUALIFICATIONS

The following comments refer to Chemtech's performance in meeting quality control specifications outlined in the "CLP Statement of Work (CLP-SOW) for Inorganic Analysis, rev. ILM04.1", the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA-540/R-94-013" and the judgement of the reviewer. The comments presented herein are based on the information provided for the review.

1.0 TIMELINESS - Acceptable

The holding time from the date of collection to the date of digestion and analyses were met for all metals (metals 180 days, mercury 28 days). Samples were collected on 11/10/03 thru 11/12/03. ICP-AES analysis was conducted on 11/25/03 and mercury on 11/26/03.

2.0 INSTRUMENT CALIBRATION/VERIFICTION - Acceptable

For ICP-AES analysis, instrument calibration was performed in accordance with method requirements. Recoveries for instrument verification standards (92-107%) met the frequency (10%) and recovery (90-110%) criteria.

For mercury analysis, the instrument was calibrated with a blank and five standards. The correlation coefficient (0.999) met the criterion ($\geq$ 0.995). Recoveries for verification standards (97-115%) met the frequency (10%) and recovery (80-120%) criteria.

Quantitation verification standards met both the frequency and recovery criteria for all analytes.

3.0 ICP-AES INTERFERENCE CHECK SAMPLE (ICS) - Acceptable

An ICS was analyzed at the beginning and end of each analytical run. ICS recoveries (81-116%) met the recovery criterion (80-120%) for all metals.

4.0 LABORATORY CONTROL SAMPLES (LCS) - Acceptable

All metals recoveries (90-107%) for the LCS were within the established control limits (80-120%).

5.0 BLANKS

Preparation and instrument control blanks were prepared and analyzed in accordance with method requirements. Blank results were either non-detected or below a factor that could impact analytical sample results for all elements with the exception of cobalt, potassium, sodium, barium, lead and zinc. Affected sample results were qualified "U".

6.0 MATRIX SPIKE ANALYSIS

A matrix spike analysis was performed for sample MJ2790. Percent recoveries (77-9%) met the recovery criterion (75-125%) with the exception of selenium (74%) and silver (66%). Selenium and silver values were qualified "UJ" with a low bias.

7.0 DUPLICATE SAMPLE ANALYSIS

A duplicate sample analysis was performed for sample MJ2790. Relative percent differences were within $\pm$ 20% or $\pm$ CRDL with the exception of mercury. Mercury values were qualified "J" or "UJ".

8.0 ICP-AES SERIAL DILUTION - Acceptable

A five-fold serial dilution was performed for sample MJ2790. Percent differences (0-4%) were within the control criterion ($\leq$ 10%).

9.0 ASSESSMENT SUMMARY

The following is a summary of qualified data: The (J) qualifier applied by the laboratory, represents results that are estimated. These values fall within a concentration range that is above the method detection limit but below the laboratory's quantitation limit. Some values for cobalt, potassium, sodium, barium, lead and zinc were qualified "U" due to the detected presence of these elements in preparation and/or instrument control blanks. Selenium and silver values were qualified "UJ" due to low recoveries in the matrix spike. Selenium and silver values may be biased low. Mercury values were qualified due to variability associated with the duplicate sample result. Bias for mercury values is undetermined.

DATA QUALIFIERS

U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

J - The associated value is an estimated quantity.

R - The data are unusable. The analyte may or may not be present in the sample.

UJ - The analyte was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

PROJECT SPECIFIC DATA QUALIFIERS:

L - Low bias.

H - High bias.

K - Unknown Bias.

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ2789

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68-W0-0089

Lab Code: CHEM Case No.: 32364 SAS No.: SDG No.: MJ27B4

Matrix (soil/water): WATER Lab Sample ID: R5089-01

Level (low/med): LOW Date Received: 11/15/03

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27.7	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	5.8	U		P
7440-39-3	Barium	1.9	B	U	P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	76.4	B	J8	P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	1.3	U		P
7440-50-8	Copper	1.0	U		P
7439-89-6	Iron	27.9	U		P
7439-92-1	Lead	2.2	B	U	P
7439-95-4	Magnesium	39.5	U		P
7439-96-5	Manganese	0.40	U		P
7439-97-6	Mercury	0.34		-JK	CV
7440-02-0	Nickel	2.3	U		P
7440-09-7	Potassium	32.7	B	U	P
7782-49-2	Selenium	3.8	U	#UJL	P
7440-22-4	Silver	1.4	U	#UJL	P
7440-23-5	Sodium	470	U		P
7440-28-0	Thallium	6.8	U		P
7440-62-2	Vanadium	0.90	U		P
7440-66-6	Zinc	24.8		U	P
	Cyanide				NR

DM 1-15-04

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Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ2790

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68-W0-0089

Lab Code: CHEM Case No.: 32364 SAS No.: SDG No.: MJ27B4

Matrix (soil/water): WATER Lab Sample ID: R5089-02

Level (low/med):LOW Date Received: 11/15/03

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	111	B	JB	P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	5.8	U		P
7440-39-3	Barium	3.3	B	U	P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	7460			P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	1.3	U		P
7440-50-8	Copper	1.0	U		P
7439-89-6	Iron	201			P
7439-92-1	Lead	2.2	U		P
7439-95-4	Magnesium	3480	B	JB	P
7439-96-5	Manganese	16.2			P
7439-97-6	Mercury	0.24		JK	CV
7440-02-0	Nickel	2.3	U		P
7440-09-7	Potassium	336	B	U	P
7782-49-2	Selenium	3.8	U	UJL	P
7440-22-4	Silver	1.4	U	UJL	P
7440-23-5	Sodium	3410	B	U	P
7440-28-0	Thallium	6.8	U		P
7440-62-2	Vanadium	1.7	B	JB	P
7440-66-6	Zinc	24.0		U	P
	Cyanide				NR

1-15-04

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Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ2791

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68-W0-0089

Lab Code: CHEM Case No.: 32364 SAS No.: SDG No.: MJ27B4

Matrix (soil/water): WATER Lab Sample ID: R5089-05

Level (low/med):LOW Date Received: 11/15/03

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	489			P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	5.8	U		P
7440-39-3	Barium	6.1		JB	P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	6500			P
7440-47-3	Chromium	2.1		JB	P
7440-48-4	Cobalt	2.0		U	P
7440-50-8	Copper	2.1		JB	P
7439-89-6	Iron	881			P
7439-92-1	Lead	4.1		U	P
7439-95-4	Magnesium	4290		JB	P
7439-96-5	Manganese	40.0			P
7439-97-6	Mercury	0.20	U	UJK	CV
7440-02-0	Nickel	2.3	U		P
7440-09-7	Potassium	393		U	P
7782-49-2	Selenium	3.8	U	UJL	P
7440-22-4	Silver	1.4	U	UJL	P
7440-23-5	Sodium	3410		U	P
7440-28-0	Thallium	6.8	U		P
7440-62-2	Vanadium	3.5		JB	P
7440-66-6	Zinc	26.6			P
	Cyanide				NR

DJH 1-15-04

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Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ2792

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68-W0-0089

Lab Code: CHEM Case No.: 32364 SAS No.: SDG No.: MJ27B4

Matrix (soil/water): WATER Lab Sample ID: R5089-06

Level (low/med): LOW Date Received: 11/15/03

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	32.6		JB	P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	5.8	U		P
7440-39-3	Barium	8.4		JB	P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	2060		JB	P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	1.3	U		P
7440-50-8	Copper	1.0	U		P
7439-89-6	Iron	30.0		JB	P
7439-92-1	Lead	2.2	U		P
7439-95-4	Magnesium	1090		JB	P
7439-96-5	Manganese	3.1		JB	P
7439-97-6	Mercury	0.20	U	UJK	CV
7440-02-0	Nickel	2.3	U		P
7440-09-7	Potassium	355		U	P
7782-49-2	Selenium	3.8	U	UJL	P
7440-22-4	Silver	1.4	U	UJL	P
7440-23-5	Sodium	2320		U	P
7440-28-0	Thallium	6.8	U		P
7440-62-2	Vanadium	0.90	U		P
7440-66-6	Zinc	23.5			P
	Cyanide				NR

DM 1-15-04

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Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ2795

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68-W0-0089

Lab Code: CHEM Case No.: 32364 SAS No.: SDG No.: MJ27B4

Matrix (soil/water): WATER Lab Sample ID: R5089-07

Level (low/med): LOW Date Received: 11/15/03

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	198	B	JB	P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	5.8	U		P
7440-39-3	Barium	12.1	B	JB	P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	1970	B	JB	P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	1.3	U		P
7440-50-8	Copper	1.0	U		P
7439-89-6	Iron	270			P
7439-92-1	Lead	2.2	U		P
7439-95-4	Magnesium	1180	B	JB	P
7439-96-5	Manganese	17.3			P
7439-97-6	Mercury	0.20	U	UJK	CV
7440-02-0	Nickel	2.3	U		P
7440-09-7	Potassium	372	B	UJ	P
7782-49-2	Selenium	3.8	U	UJL	P
7440-22-4	Silver	1.4	U	UJL	P
7440-23-5	Sodium	1880	B	UJ	P
7440-28-0	Thallium	6.8	U		P
7440-62-2	Vanadium	0.90	U		P
7440-66-6	Zinc	21.8			P
	Cyanide				NR

1-15-04

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Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ2798

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68-W0-0089

Lab Code: CHEM Case No.: 32364 SAS No.: SDG No.: MJ27B4

Matrix (soil/water): WATER Lab Sample ID: R5089-08

Level (low/med):LOW Date Received: 11/15/03

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27.7	U		P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	5.8	U		P
7440-39-3	Barium	11.1		JB	P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	6830			P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	1.3	U		P
7440-50-8	Copper	1.0	U		P
7439-89-6	Iron	31.2		JB	P
7439-92-1	Lead	2.7		U	P
7439-95-4	Magnesium	1220		JB	P
7439-96-5	Manganese	11.0		JB	P
7439-97-6	Mercury	0.20	U	UJK	CV
7440-02-0	Nickel	2.3	U		P
7440-09-7	Potassium	404		U	P
7782-49-2	Selenium	3.8	U	UJL	P
7440-22-4	Silver	1.4	U	UJL	P
7440-23-5	Sodium	1960		U	P
7440-28-0	Thallium	6.8	U		P
7440-62-2	Vanadium	0.90	U		P
7440-66-6	Zinc	31.5			P
	Cyanide				NR

DM 1-15-04

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ27B4

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68-W0-0089

Lab Code: CHEM Case No.: 32364 SAS No.: SDG No.: MJ27B4

Matrix (soil/water): WATER Lab Sample ID: R5089-09

Level (low/med):LOW Date Received: 11/15/03

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8740			P
7440-36-0	Antimony	9.2	U		P
7440-38-2	Arsenic	5.8	U		P
7440-39-3	Barium	213			P
7440-41-7	Beryllium	0.72	B	JB	P
7440-43-9	Cadmium	14.4			P
7440-70-2	Calcium	21100			P
7440-47-3	Chromium	93.1			P
7440-48-4	Cobalt	9.6	B	U	P
7440-50-8	Copper	129			P
7439-89-6	Iron	36600			P
7439-92-1	Lead	338			P
7439-95-4	Magnesium	6270			P
7439-96-5	Manganese	524			P
7439-97-6	Mercury	0.91		J K	CV
7440-02-0	Nickel	83.8			P
7440-09-7	Potassium	2800	B	JB	P
7782-49-2	Selenium	3.8	U	UJL	P
7440-22-4	Silver	1.4	U	UJL	P
7440-23-5	Sodium	123000			P
7440-28-0	Thallium	6.8	U		P
7440-62-2	Vanadium	19.5	B	JB	P
7440-66-6	Zinc	1050			P
	Cyanide				NR

DM 1-15-04

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Comments: